

Western Section

American Society of Animal Science

73rd Annual Meeting



Montana State University

Bozeman, Montana

June 20–22, 2001

WESTERN SECTION AMERICAN SOCIETY OF ANIMAL SCIENCE

SUMMARY OF SCHEDULED EVENTS

Tuesday, June 19, 2001

4:00 p.m. – 7:00 p.m. Registration, North Hedges
Dormitory

Wednesday, June 20, 2001

7:00 a.m. – 5:00 p.m. Registration, Northwest
Lounge, Strand Student
Union Building (SUB)

8:00 a.m. – 4:30 p.m. Symposium “Using Science
and Marketing in Producing
and Delivering Value-Added
Products for the Consumer”,
Theater, SUB.

5:00 p.m. – 6:00 p.m. Poster Set-up, Ballroom A,
SUB (posters remain in
place until Friday 12:00 p.m.)

6:00 p.m. – 9:00 p.m. Informal Reception, Ballroom
A, SUB

Thursday, June 21, 2001

7:00 a.m. – 5:00 p.m. Registration Booth, Ballroom
A, SUB

8:00 a.m. – 8:40 a.m. Distinguished Service Award
Presentation, Dr. G. Eric
Bradford, University of
California, Davis, Ballroom
B, SUB

8:45 a.m. – 10:00 a.m. Graduate Student Competi-
tion, Ballroom B, SUB

10:00 a.m. – 10:30 a.m. Break, Ballroom A, SUB

10:30 a.m. – 11:45 a.m. Graduate Student Competi-
tion, Ballroom B, SUB

12:00 p.m. – 1:00 p.m. Graduate Luncheon and
Career Froum, Room 276,
SUB

1:15 p.m. – 3:00 p.m. Graduate Student Competi-
tion, Ballroom B, SUB

1:00 p.m. – 3:00 p.m. Extension Symposium,
Ballroom C, SUB

- 1:00 p.m. – 3:15 p.m. Breeding and Genetics, Room 275, SUB
- 3:00 p.m. – 3:30 p.m. Break, Ballroom A, SUB
- 3:30 p.m. – 5:00 p.m. Extension; Environment & Livestock Management, Ballroom C, SUB
- 3:30 p.m. – 5:00 p.m. Physiology, Room 275, SUB
- 3:30 p.m. – 5:00 p.m. Ruminant Nutrition, Ballroom B, SUB
- 3:30 p.m. – 5:00 p.m. Posters, Ballroom A, SUB
- 6:30 p.m. – 9:00 p.m. Barbecue Dinner and Awards Program, American Simmental Association, (1 Simmental Way, Bozeman)

Friday, June 22, 2001

- 8:00 a.m. – 12:00 p.m. Registration, Conference Service (Room 280), SUB
- 8:00 a.m. – 8:55 p.m. Business Meeting, Ballroom B, SUB
- 9:00 a.m. – 10:00 a.m. Environment & Livestock Management, Ballroom C, SUB
- 9:00 a.m. – 10:00 a.m. Physiology, Room 275, SUB
- 9:00 a.m. – 10:00 a.m. Ruminant Nutrition, Ballroom B, SUB
- 9:00 a.m. – 10:00 a.m. Posters, Ballroom A, SUB
- 10:00 a.m. – 10:30 a.m. Break, Ballroom A, SUB
- 10:30 a.m. – 12:00 p.m. Environment & Livestock Management, Ballroom C, SUB
- 10:30 a.m. – 12:00 p.m. Pastures and Forages, Room 275, SUB
- 10:30 a.m. – 12:00 p.m. Ruminant Nutrition, Ballroom B, SUB
- 10:30 A.M. – 12:00 p.m. Posters, Ballroom A, SUB

Saturday, June 23, 2001

- Tours depart and return south end Strand Student Union Building (SUB)
- 7:30 a.m. – 5:30 p.m. Ranch Tour (Flying D. Bison Ranch, Sitz Angus Ranch, Cooper Hereford Ranch)
- 7:30 a.m. – 2:00 p.m. Ranch Tour (Flying D Bison Ranch, Sitz Angus Ranch)
- 11:00 a.m. – 5:30 a.m. Ranch Tour (Sitz Ranch, Cooper Hereford Ranch)

PROGRAM

Wednesday, June 20, 2001

SYMPOSIUM

Using Science and Marketing in Producing and Delivering

Value Added Products for the Consumer

Dr. Jim Sprinkle, University of Arizona, Presiding

Wednesday, 7:00 a.m. – 4:30 p.m.
Strand Union Theater, SUB

- 7:00 Registration & Continental Breakfast
- 8:00 Introductions & Welcome
Dr. Noelle Cockett, USU, Logan, Utah,
WSASAS President
Dr. Jim Sprinkle, University of AZ, Payson,
AZ, Symposium Chair

Marketing Value-Added Products in the New Economy

- 8:15 The Changing Market Structure for the
American Beef Industry. Dr. Harlan Hughes,
North Dakota State University, Fargo.
- 8:55 Value-Added Beef Production: What Incentives
are Needed to Pull Production Systems
into the Changing Market? Dr. Wayne Purcell,
VA Tech, Blacksburg, VA.
- 9:30 Future Beef: A Case Study in Beef Production
Alliances. Dr. Ronnie Green, Future Beef
Operations, LLC.
- 10:00 BREAK

Adding Value to Beef with Technology to Meet Market Needs

- 10:25 Available Technology Tools to Produce and
Deliver Final Products. Dr. Harlan Ritchie,
Michigan State University, East Lansing, MI.

- 11:05 Using DNA Markers, Carcass EPDs and Carcass Value Indices in Meeting Market Targets Without Sacrificing Maternal Production Traits. Dr. Mike Tess, Montana State University, Bozeman, MT.
- 11:50 Introduction of Sponsors
- 12:00 LUNCH (not provided)
- 1:30 Integrating Innovative Management Strategies (Implants, Nutrition, Sorting etc.) to Alter Growth Patterns and Meet Market Targets. Dr. Robbi Pritchard, South Dakota State University, Brookings, SD.
- 2:10 Integrating Harvest and Post-Harvest Technologies to Meet Market Needs. Dr. Tommy Wheeler, USDA-Meat Animal Research Center, Clay Center, NE.
- 2:45 BREAK

Putting It Together

- 3:05 Panel Discussion: Creating and Marketing Value-Added Products
Panel Moderator: Dr. John Paterson, Montana State University, Bozeman

Improving Competitiveness of Domestic Beef by Adding Value.

Mr. Jim Peterson, Peterson Ranch, Buffalo, MT

New Product Development for the Consumer.

Ms. Charlene Schuster, Montana Beef Council, Helena, MT

Role of Seedstock Breeder in Supplying Genetics for Value-Added Products.

Mr. Lee Leachman, Leachman Cattle Co., Billings, MT
Other Panel Members: Dr. Harlan Hughes, Dr. Wayne Purcell, Dr. Harlan Ritchie, Dr. Ronnie Green

- 3:55 Questions to Panel from Audience

Informal Reception

Wednesday, 6:00 p.m. – 9:00 p.m.
Ballroom A, Strand Student Union Building
(SUB)

Thursday, June 21, 2001

Distinguished Service Award Presentation

Thursday, 8:00 a.m. – 8:40 a.m.
Ballroom B, Strand Student Union Building (SUB)

2000 Awardee

Dr. G. Eric Bradford, University of California, Davis
Prospects for the Western Range Livestock Industry

GRADUATE STUDENT COMPETITION I - ORAL

Chair: Dr. James Strickland (Chair of Competition
Committee) New Mexico State University, Las Cruces

Thursday, 8:45 a.m. – 10:00 a.m.
Room: Ballroom B, SUB

Time	Abstract Number	
8:45	40	Supplementation of undegradable intake protein to yearling heifers grazing flood-meadow pastures. C.A. Stonecipher*, D.R. ZoBell, K.C. Olson, and B.R. Bowman, Utah State University, Logan.
9:00	41	Does troponin-T degradation, collagen percentage or collagen crosslinking explain differences in tenderness between Wagyu and Limousin cattle? P.S. Kuber* ¹ , J.R. Busboom ¹ , E. Huff-Lonergan ² , S.K. Duckett ³ , P.S. Mir ⁴ , Z. Mir ⁴ , R.J. McCormick ⁵ , M.V. Dodson ¹ , C.T. Gaskins ¹ , and D.J. Marks ¹ , ¹ Washington State University, Pullman, ² Iowa State University, Ames, ³ University of Idaho, Moscow, ID, ⁴ Agriculture and Agri-Food Canada, Lethbridge, AB, ⁵ University of Wyoming, Laramie.
9:15	42	Effect of an endothelin-1 receptor antagonist on serum progesterone levels in the mid-luteal bovine corpus luteum. D. J. Denniston*, K. K. Kane,

W. D. Bryant, L. Canales, and D. E. Hawkins, New Mexico State University, Las Cruces.

- 9:30 43 Effect of ammoniation on digestibility of bluegrass seed straw in beef cattle. J. I. Szasz*¹, C. W. Hunt¹, L. R. Kennington¹, G. T. Pritchard¹, A. V. Grove¹, K. A. Johnson², and S. M. Parish², ¹University of Idaho, Moscow, ²Washington State University, Pullman.
- 9:45 44 Dietary safflower seeds influence 18:1^{trans-11} and conjugated linoleic acids (CLA) of lamb carcasses. M. R. Bolte*, B. W. Hess, W. J. Means, G. E. Moss, and D. C. Rule, University of Wyoming, Laramie.

GRADUATE STUDENT COMPETITION II - ORAL

Chair: Dr. James Strickland, New Mexico State University, Las Cruces

Thursday, 10:30 a.m. – 11:45 a.m.
Room: Ballroom B, SUB

- | Time | Abstract Number | |
|-------------|------------------------|--|
| 10:30 | 45 | Characterization of ruminal protein degradation in potential forages for irrigated pastures in the Intermountain West. A.A. Davis* ¹ , K.C. Olson ¹ , D.B. Vagnoni ² , and G.A. Broderick ³ , ¹ Utah State University, Logan, ² Cargill Animal Nutrition Center, Elk River, MN, ³ U.S. Dairy Forage Research Center, Madison, WI. |
| 10:45 | 46 | Oviductal characteristics and protein concentrations in prepubertal ewe lambs, and mature ewes after natural or progestin-synchronized estrus. A. S. Jacobs*, J. G. Berardinelli, P. S. Joshi, and R. Adair, Montana State University, Bozeman. |
| 11:00 | 47 | Effects of snakeweed (<i>Gutierrezia</i> spp.) ingestion on reproduction and liver function in sheep. D.J. Padilla*, T.T. Ross, D.M. Hallford, M.W. Salisbury ¹ , and J.L. Bollinger, ¹ University of Tennessee, Knoxville. |
| 11:15 | 48 | Evaluation of calving seasons and marketing strategies in Northern Great Plains cow-calf enterprises. V. L. Reisenauer*, M. W. Tess, D. A. Griffith, and J. P. Paterson, Montana State University, Bozeman. |
| 11:30 | 50 | Biohydrogenation, flow and disappearance of fatty acids in beef cattle fed supplemental high-linoleate or high-oleate safflower seeds. E. J. Scholljegerdes*, B. W. Hess, K. R. Hightower, G. E. Moss, D. L. Hixon, and D. C. Rule, University of Wyoming, Laramie. |

GRADUATE LUNCHEON and CAREER FORUM

Moderator: Dr. Jan Bowman, Montana State University, Bozeman
Thursday, 12:00 p.m. – 1:00 p.m.

Room 276, SUB

Box lunch courtesy of Western Section Executive Committee

GRADUATE STUDENT COMPETITION III - ORAL

Chair: Dr. James Strickland, New Mexico State University, Las Cruces

Thursday, 1:15 p.m. – 3:00 p.m.
Room: Ballroom B, SUB

Time	Abstract Number	
1:15	51	Effect of the progesterone receptor antagonist, mifepristone, on progesterone secretion from the early and mid cycle bovine corpus luteum. L. Canales*, D. J. Denniston, K. K. Kane, W. D. Bryant, R. Kelling, and D. E. Hawkins, New Mexico State University, Las Cruces.
1:30	53	Transplantation of Bovine Germinal Cells into Mouse Testes. J.M. Oatley*, D.M. de Avila, M.D. Griswold, and J.J. Reeves, Washington State University, Pullman.
1:45	54	Effect of fishmeal supplementation on fertility in primiparous, lactating beef cows. T.R. Bonnette*, J.C. Whittier, T.E. Engle, and P.D. Burns, Colorado State University, Fort Collins.
2:00	55	A mutation at the <i>agouti</i> locus is associated with recessive black coat color in sheep. M. A. Smit*, T. L. Shay, and N. E. Cockett, Utah State University, Logan.
2:15	56	Performance and metabolic characteristics of multiparous Angus and Brahman cows grazing in the Chihuahuan desert. B.S. Obeidat* ¹ , M.G. Thomas ¹ , C.C. Bailey ¹ , D.M. Hallford ¹ , D.H. Keisler ² , M.L. Petersen ¹ , W.D. Bryant ¹ , J.A. Hernandez ¹ , M.D. Garcia ¹ , and R. Lopez ¹ , ¹ New Mexico State University, Las Cruces, ² University of Missouri, Columbia.
2:30	57	Feeding strategies affect conjugated linoleic acid content and quality of beef. C. S. Poulson*, T. R. Dhiman, D. Cornforth, and K. C. Olson, Utah State University, Logan.

- 2:45 58 Evaluation of the melengestrol acetate / prostaglandin (MGA/PGF) estrous synchronization protocol with addition of GnRH at 48 hr post PGF on AI pregnancy rates in yearling beef heifers. D. S. Baker*, P. D. Burns, and J. C. Whittier, Colorado State University, Fort Collins.

EXTENSION SYMPOSIUM

Chair: Dr. Rick Funston, Montana State University,
Bozeman

Thursday, 1:00 p.m. – 3:00 p.m.
Room: Ballroom C, SUB

- 1:00 Source Verification and Approaches to Reduce Calf Morbidity. John Paterson, Montana State University.
- 1:15 Inside Beef and Risk Management From Ranch to Rail. Ron Torell, University of Nevada.
- 1:30 Producer educational initiatives: The Use of Science and Research to Improve Consumer Confidence and Acceptance of Beef. Deb Roeber, Colorado State University.
- 1:45 Compliance with the Clean Water Act: Animal Feeding Operations and the EPA. Randy Mills and John Williams, Oregon State University.
- 2:00 The Use of Sheep in Natural Resource Management Programs. Rodney Kott, Montana State University.
- 2:15 Producer - Driven Heifer Development Research and Extension Program. Doug Hixon, University of Wyoming.
- 2:30 Missouri Show-Me-Select Replacement Heifer Program. Dave Patterson, University of Missouri.
- 2:45 Livestock Information Databases. Bob Kattnig, University of Arizona.

BREEDING AND GENETICS - ORAL

Chair: Dr. Michael Tess, Montana State University,
Bozeman

Thursday, 1:00 p.m. – 3:15 p.m.
Room 275, SUB

- | Time | Abstract Number | |
|-------------|------------------------|---|
| 1:00 | 1 | Evaluation of F1 crosses from Angus, Charolais, Salers, Piedmontese, Tarentaise and Hereford sires. I. Calf performance and heifer devel- |

- opment. D. L. Boss^{*1}, D. D. Kress², D. C. Anderson¹, D. W. Bailey¹, and K. C. Davis², ¹Northern Agricultural Research Center, Havre, Montana, ²Montana State University, Bozeman.
- 1:15 2 Evaluation of F₁ crosses from Angus, Charolais, Salers, Piedmontese, Tarentaise and Hereford sires. II: Feedlot and carcass traits. D.C. Anderson^{*1}, D.D. Kress², D.W. Bailey¹, D.L. Boss¹, and K.C. Davis², ¹Northern Agricultural Research Center, Havre, MT, ²Montana State University, Bozeman.
- 1:30 3 Evaluation of F₁ crosses from Angus, Charolais, Salers, Piedmontese, Tarentaise and Hereford sires. III. Cow traits of young dams. K. C. Davis^{*1}, D. D. Kress¹, D. C. Anderson², D. L. Boss², and D. W. Bailey², ¹Montana State University, Bozeman, ²Northern Agricultural Research Center, Harve, MT.
- 1:45 4 Evaluation of F₁ crosses from Angus, Charolais, Salers, Piedmontese, Tarentaise or Hereford sires. IV. Calf traits from 2-yr-old and 3 and 4-yr-old dams. K. C. Davis^{*1}, D. D. Kress¹, D. C. Anderson², D. L. Boss², and D. L. Bailey², ¹Montana State University, Bozeman, ²Northern Agricultural Experiment Station, Harve, MT.
- 2:00 5 Evaluation of F₁ crosses from Angus, Charolais, Salers, Piedmontese, Tarentaise and Hereford sires V: Grazing distribution patterns. D. W. Bailey^{*1}, D. D. Kress², D. C. Anderson¹, D. L. Boss¹, and K. C. Davis², ¹Northern Agricultural Research Center, Havre, MT, ²Montana State University, Bozeman.
- 2:15 6 Estimating genetic parameters of a linear type scoring method for beef cattle . D. P. Kirschten^{*}, D. D. Kress, M. W. Tess, and K. C. Davis, Montana State University, Bozeman.
- 2:30 7 Heritability and repeatability of sexual performance. G. D. Snowden^{*1}, J. N. Stellflug¹, and L. D. Van Vleck², ¹USDA, ARS, U. S. Sheep Experiment Station, Dubois, ID, ²USDA, ARS, MARC, Lincoln, NE.
- 2:45 8 Survival, growth and carcass composition of lambs sired by Dorper and Suffolk sires. H.H. Meyer^{*}, J.M. Thompson, and T.M. Spezzano, Oregon State University, Corvallis.
- 3:00 9 The effect of the callipyge mutation on genes in the distal end of ovine chromosome 18. T. L. Shay^{*1}, C. A. Bidwell², C. Charlier³, K. Segers³, S. Berghmans³, M. Georges³, and N. E. Cockett¹, ¹Utah State University, Logan, ²Purdue University, West Lafayette, IN, ³University of Liege, Liege, Belgium.

EXTENSION; ENVIRONMENT and LIVESTOCK MANAGEMENT I - ORAL

Chair: Dr. Clay Mathis, New Mexico State University,
Las Cruces

Thursday, 3:30 p.m. – 5:00 p.m.
Room: Ballroom C, SUB

Time	Abstract Number	
3:30	37	Meeting carcass quality specifications and carcass characteristics of Northern California cattle in alliance, futurity and youth programs. D.J. Drake* and L.C. Forero, University of California-Davis, Cooperative Extension.
3:45	38	Selenium supplementation of beef cattle via fertilizer amendment. R. L. Hathaway*, J. E. Oldfield, S. G. Paxton, and G. J. Pirelli, Oregon State University, Corvallis.
4:00	15	Development of Holstein heifers grazing irrigated grass-legume pastures. R. Flores* ¹ , R. Lopez ¹ , M. Looper ¹ , C. Krehbiel ¹ , E. Hanson ² , K. Duncan ² , M. Murray ² , M. Thomas ¹ , G. Donart ¹ , and R. Flynn ² , ¹ New Mexico State University, Las Cruces, ² NMSU Agricultural Science Center, Artesia, New Mexico.
4:15	16	Orientation of beef cattle grazing foothill winter range in Montana. B.E. Olson* and R.T. Wallander, Montana State University, Bozeman.
4:30	17	Sheep and cattle response when grazed together on sagebrush-grass rangeland. B.C. Glidewell ¹ , J.C. Mosley* ² , and J.W. Walker ³ , ¹ USDA-ARS Grazing Lands Research Lab, El Reno, OK, ² Montana State University, Bozeman, ³ Texas Agricultural Experiment Station, San Angelo.
4:45	18	The influence of cattle grazing on elk forage conditions and habitat selection. K.K. Crane* ¹ , J.C. Mosley ² , T.K. Brewer ² , W.L. Torstenson ² , and M.W. Tess ² , ¹ University of Wyoming, Laramie, ² Montana State University, Bozeman.

PHYSIOLOGY I - ORAL

Chair: Dr. Dean Hawkins, New Mexico State University, Las Cruces

Thursday, 3:30 p.m. – 5:00 p.m.
Room 275, SUB

Time	Abstract Number	
3:30	84	Synchronization of estrus in beef cows using GnRH and PGF with estrus AI or timed AI 72 h after PGF with or without a second GnRH injection. T.W. Geary* ¹ , J. C. Whittier ² , R. G. Mortimer ² , J. W. Young ³ , and R. R. Salverson ⁴ , ¹ USDA-ARS, Miles City, MT, ² Colorado State University, Fort Collins, ³ Rex Ranch, Whitman, NE, ⁴ Select Sires, Columbus, OH.
3:45	85	A MGA-prostaglandin-GnRH estrus synchronization protocol suitable for timed artificial insemination. D. L. Hixon*, R. D. Landeis, B. M. Alexander, D. W. Moore, D. D. Carr, and G. E. Moss, University of Wyoming, Laramie.
4:00	86	Half dose GnRH does not affect pregnancy rates with the CO-Synch synchronization protocol. H. Foster ¹ , J.C. Whittier* ¹ , P.D. Burns ¹ , J. Breummer ¹ , T. Field ¹ , and T.W. Geary ² , ¹ Colorado State University, Ft. Collins, ² USDA-ARS, Miles City, MT.
4:15	87	Effect of presence of bulls and restricted suckling on breeding performance of first-calf suckled beef cow using the Ovsynch protocol. J. G. Berardinelli*, K. Anderson, B. Robinson, and R. Adair, Montana State University, Bozeman.
4:30	88	Supplementation of whole sunflower seeds before AI in beef heifers. R. N. Funston* ¹ , T. W. Geary ² , R. P. Ansotegui ¹ , J. J. Lipsey ³ , M. D. MacNeil ² , and J. A. Paterson ¹ , ¹ Montana State University, Bozeman, ² USDA-ARS, Miles City, MT, ³ American Simmental Association, Bozeman.
4:45	89	Transcervical artificial insemination in sheep: Effects of a modified transcervical artificial insemination instrument and traversing the cervix. M. C. Wulster-Radcliffe* and G. S. Lewis, USDA-ARS U.S. Sheep Experiment Station, DuBois, ID.

RUMINANT NUTRITION I - ORAL

Chair: Dr. David Bohnert, Oregon State University,
Burns

Thursday, 3:30 p.m. – 5:00 p.m.

Room: Ballroom B, SUB

Time	Abstract Number	
3:30	105	Response of old world and little bluestem to spring prescribed fire. T. N. Bodine, H. T. Purvis II, and D. M. Engle, Oklahoma Agricultural Experiment Station, Stillwater.
3:45	106	Effects of methionine hydroxy analog (MHA) and(or) fat added to a liquid supplement on ruminal and postruminal digestion and duodenal flow of nutrients in beef steers consuming low-quality lovegrass hay. G. D. Pulsipher ^{*1} , C. R. Krehbiel ² , L. A. Balstad ³ , M. K. Petersen ³ , D. V. Dhuyvetter ⁴ , M. S. Brown ⁵ , and B. M. Capitan ³ , ¹ Eastern Oregon Agriculture Research Center, Union, ² Oklahoma State University, Stillwater, ³ New Mexico State University, Las Cruces, ⁴ Farmland Industries, Kansas City, MO, ⁵ West Texas A&M University, Canyon, TX.
4:00	107	Site and extent of digestion in beef cattle consuming restricted amounts of forage and supplemental undegradable intake protein. E. J. Scholljegerdes [*] , J. Gould, B. W. Hess, and P. A. Ludden, University of Wyoming, Laramie.
4:15	108	Site and extent of digestion by beef heifers fed medium-quality hay and supplemental corn or soybean oil. B. W. Hess [*] , M. B. Whitney, and D. C. Rule, University of Wyoming, Laramie.
4:30	109	Urinary allantoin as an index of bacterial crude protein supply of cattle fed forage. R.A. Mass ^{*1} , D.J. Jordon ¹ , T.L. Scott ¹ , K.W. Creighton ¹ , D.L. Harmon ² , C.T. Milton ¹ , and T.J. Klopfenstein ¹ , ¹ University of Nebraska-Lincoln, ² University of Kentucky-Lexington.
4:45	110	A mechanistic approach to the estimation of intake of ruminants by methane excretion and <i>in vitro</i> fermentation characteristics. M. Blummel ¹ , E. E. Grings ^{*1} , A. R. Moss ² , and D. I. Givens ² , ¹ USDA-ARS, Fort Keogh LARRL, Miles City, MT, ² ADAS Nutritional Sciences Research Unit, Stratford on Avon, UK.

POSTER I

Thursday, 3:30 p.m. – 5:00 p.m.
Room: Ballroom A, SUB
Authors Present

Environment and Livestock Management

Abstract Number

- 19 Late spring calving lowers cow wintering costs with minimal impact to calf performance. M. A. Smith^{*1}, J. W. Waggoner, Jr.¹, D. M. Perry¹, and R. H. Hart², ¹University of Wyoming, Laramie, ²USDA-ARS-High Plains Grassland Research Station, Cheyenne, Wyoming.
- 20 Effect of protein sources differing in rumen degradability and calcium propionate content on *in-vitro* gas production. R. C. Waterman, L. A. Stalker^{*}, L. A. Balstad, and M. K. Petersen, New Mexico State University, Las Cruces.
- 21 Feedlot performance and carcass characteristics of Texas Rambouillet feeder lambs implanted with Zeranol implants. J. R. Stultz, B. J. May^{*}, G. R. Engdahl, M. A. Carr, C. B. Scott, and R. L. Reed, Angelo State University, TX.
- 22 Preliminary characterization of swainsonine absorption and elimination in sheep following acute exposure. A. K. Clayshulte^{*1}, J. R. Strickland¹, J. B. Taylor², R. L. Ashley¹, and M. A. Siepel¹, ¹New Mexico State University, Las Cruces, ²North Dakota State University, Fargo.
- 23 Serum GH, insulin and thyroxine and body weight, and mammary changes of ewes in response to weaning methods. J.A. Hernandez^{*1}, N.H. Wells¹, D.W. Holcombe², and D.M. Hallford¹, ¹New Mexico State University, Las Cruces, ²University of Nevada, Reno.
- 24 Growth of dairy calves fed with two different milk replacers in Mexicali, Mexico. J.S. Saucedo-Quintero^{*}, L. Avendao-Reyes, and F.D. Alvarez-Valenzuela, University of Baja California, Calexico.
- 25 Influence of body temperature and metabolic disorders on milk production and reproduction in postpartum dairy cattle. A.C. Fitzgerald^{*1}, J.C. Hilliard², C.A. Rogers¹, and M.L. Loooper¹, ¹New Mexico State University, Las Cruces, New Mexico, ²BJZ Dairy, Mesquite, New Mexico.
- 26 Semen collection from rams: Artificial vagina versus a vaginal collection vial. M. C. Wulster-Radcliffe, M. A. Williams, J. N. Stellflug, and G. S. Lewis^{*}, USDA-ARS Sheep Experiment Station, DuBois, ID.

Meat Science and Muscle Biology

Abstract Number

- 59 A possible role of the leptin assay in assessing carcass fat and composition in beef cattle. T.W. Geary¹, E.L. McFadin-Buff^{*2}, M.D. MacNeil¹, R.N. Funston¹, R.E. Short¹, E.E. Grings¹, and D.H. Keisler², ¹USDA-ARS Ft. Keogh LARRL, Miles City, MT, ²University of Missouri, Columbia.
- 60 Genotype effects on cholesterol and fatty acids in longissimus and semitendinosus muscles from Hereford, Limousin, and Piedmontese F2 crossbred cattle at slaughter. D. C. Rule¹, J. M. Rule^{*1}, R. E. Short², E. E. Grings², and M. D. MacNeil², ¹University of WY, Laramie, ²USDA-ARS Ft. Keogh LARRL, Miles City, MT.
- 61 Changes in critical variables of the slaughter process and their effect on pork quality. A.D. Alarcon-Rojo^{*}, J.G. Gamboa, A. Grado, and F.A. Rodriguez-Almeida, Universidad Autonoma de Chihuahua, Chihuahua, MX.
- 62 Comparison of muscle cholesterol and fatty acid profiles of bison, beef cattle, elk, and chicken. D. C. Rule^{*1}, K. S. Broughton¹, and G. Maiorano², ¹University of Wyoming, Laramie, ²Universiti degli Studi del Molise, Campobasso, Italy.

Pastures and Forages

Abstract Number

- 66 Estimation of forage mass using a visual obstruction technique. C. J. Ackerman, J. Sumner, and T. R. Shirley^{*}, Oregon State University, Corvallis.
- 67 Beet pulp supplementation of heifers grazing native flood meadow: performance and ruminal fermentation. D. W. Bohnert¹, C. S. Schauer^{*1}, and T. DelCurto², ¹Eastern Oregon Agriculture Research Center, Oregon State University, Burns, ²Eastern Oregon Agriculture Research Center, Oregon State University, Union.
- 68 Livestock performance on seeded forages in the Northern Great Plains. M. R. Haferkamp^{*}, E. E. Grings, R. K. Heitschmidt, and M. D. MacNeil, USDA-ARS, Fort Keogh LARRL, Miles City, MT.
- 69 Variation of forage quality characteristics of barley. L.M.M. Surber, M. T. Stowe^{*}, J.G.P. Bowman, S. D. Cash, P. F. Hensleigh, and T. K. Blake, Montana State University, Bozeman.
- 70 Nutritional quality of dormant high-sugar corn forage. V. Nayigihugu^{*}, B. W. Hess, L. Brokaw, and D. W. Koch, University of Wyoming, Laramie.
- 71 Effects of direct-fed viable yeast culture on productivity of beef cows wintered on low-quality forages. B. R. Bowman^{*}, R. D. Wiedmeier, D.Y. Kim, B. A. Kent, and J. L. Walters, Utah State University, Logan.

- 72 Developing replacement beef heifers using diets based on ammoniated low-quality forages. M. L. Watson*, B. A. Kent, R. D. Wiedmeier, and J. L. Walters, Utah State University, Logan.
- 73 Alfalfa versus grass hay as supplements for beef cows wintered on ammoniated wheat straw. K. Palmer*, R. D. Wiedmeier, B. A. Kent, C. A. Fitzgerald, and J. L. Walters, Utah State University, Logan.
- 74 Exogenous cellulase enhances the utilization of ammoniated wheat straw in pregnant and lactating beef cows. B. M. Spratling*, R. D. Weidmeier, C. A. Fitzgerald, and B. A. Kent, Utah State University, Logan.
- 75 Effects of fibrolytic enzyme addition on forage barley varieties for backgrounding steers. K. N. Robison*, J.G.P. Bowman, L.M.M. Surber, S. D. Cash, K. A. Anderson, R. L. Endecott, J. J. Kincheloe, and B. L. Robinson, Montana State University, Bozeman.
- 76 Brief exposure of suckling beef calves to low-quality forages improves performances when re-exposed to these forages as mature cows. R. D. Wiedmeier*, F. D. Provenza, B. Burritt, and B. A. Kent, Utah State University, Logan.
- 77 Effects of sheep grazing or mowing on the control of perennial pepperweed (*Lepidium latifolium* L.). J. R. Allen*, D. W. Holcombe, D. R. Hanks, M. Surian, M. McFarland, L. B. Bruce, W. Johnson, and G. Fernandez, University of Nevada, Reno.

WSASAS AWARDS

BARBECUE DINNER

Thursday, 6:30 p.m. – 9:00 p.m.
American Simmental Association
(1 Simmental Way, Bozeman)

Western Music by THE RINGLING FIVE,
Ringling, MT

Friday, June 22, 2001

BUSINESS MEETING

Friday, 8:00 a.m. – 8:55 p.m.
Room: Ballroom B, SUB

ENVIRONMENT and LIVESTOCK MANAGEMENT II - ORAL

Chair: Dr. Elaine Grings, USDA-ARS, Miles City, MT

Friday, 9:00 a.m. – 10:00 a.m.

Room: Ballroom C, SUB

Time	Abstract Number	
9:00	27	Influence of beef breeds (Brangus, Charlais, or Hereford) on locoweed consumption. G. C. Duff* ¹ , M. H. Ralphs ² , D. A. Walker ¹ , J. D. Graham ¹ , J. D. Rivera ¹ , and L. F. James ² , ¹ Clayton Livestock Research Center, New Mexico State University, Clayton, ² USDA-ARS Poisonous Plant Research Laboratory, Logan, UT.
9:15	28	Acute oral exposure of lactating ruminants to swainsonine and subsequent appearance in the serum, elimination in milk and subclinical toxicity in the mothers and nursing young. J. B. Taylor* ¹ and J. R. Strickland ² , ¹ North Dakota State University, Fargo, ² New Mexico State University, Las Cruces.
9:30	29	A model for determining risk of pine needle abortion in cattle calving at different times of the year. R. E. Short*, M. D. MacNeil, and E. E. Grings, USDA-ARS, Fort Keogh LARRL, Miles City, MT.
9:45	30	Inhibitory effect of nitrocompounds on ruminal methane production in vitro. R. C. Anderson* ¹ , T. R. Callaway ¹ , J. S. Van Kessel ² , and D. J. Nisbet ¹ , ¹ USDA/ARS, Food and Feed Safety Research Unit, College Station, TX, ² USDA/ARS, Animal Waste Pathogen Laboratory, Beltsville, MD.

PHYSIOLOGY II - ORAL

Chair: Dr. Dale Holcomb, University of Nevada, Reno

Friday, 9:00 a.m. – 10:00 a.m.

Room 275, SUB

Time	Abstract Number	
9:00	90	Effect of Heparin in in vitro fertilization media after Percoll separation of frozen thawed-bull semen? J.O. Mendes*, J.F. Sanchez, P. Burns, and G. Seidel, Colorado State University, Fort Collins.
9:15	91	Treatment with estradiol benzoate and progesterone to induce emergence of a new ovulatory

follicle in cattle. M.L. Mussard*, H. Jimenez-Severiano, and J.E. Kinder, University of Nebraska, Lincoln.

- 9:30 92 Effect of neuropeptide Y on GnRH-induced LH release from bovine anterior pituitary cell cultures. D. J. Denniston*, M. G. Thomas, K. K. Kane, L. Canales, W. D. Bryant, C. N. Roybal, D. M. Hallford, and D. E. Hawkins, New Mexico State University, Las Cruces.
- 9:45 93 Serum thyroxine, body weights, and ovarian cyclicity in fine wool ewes subjected to thyroid suppression immediately before onset of anestrus. J.A. Hernandez*, D.M. Hallford, and N.H. Wells, New Mexico State University, Las Cruces.

RUMINANT NUTRITION II - ORAL

Chair: Dr. Marc Bauer, North Dakota State University,
Fargo

Friday, 9:00 a.m. – 10:00 a.m.

Room: ballroom B, SUB

- | Time | Abstract Number | |
|-------------|------------------------|--|
| 9:00 | 111 | Relationship between hip height and live weight on growth characteristics and carcass composition of calf-fed Holstein steers. M. Machado*, N. Torrentera, and R. A. Zinn, University of California, Davis. |
| 9:15 | 112 | Effects of concentrated separator by-product on intake, digestion, and in situ dry matter disappearance in yearling beef steers. S.M. Shellito*, J.S. Caton, C. Navanukraw, A.M. Encinias, G.P. Lardy, and M.L. Bauer, North Dakota State University, Fargo. |
| 9:30 | 113 | Effects of vitamin E supplementation on performance and health of beef cattle. J. D. Rivera* ¹ , G. C. Duff ¹ , M. L. Galyean ² , D. A. Walker ¹ , and G. A. Nunnery ² , ¹ New Mexico State University, Clayton Livestock Research Center, Clayton, NM, ² Texas Tech University, Lubbock. |
| 9:45 | 114 | Phytic acid levels in barley. N. Taylor* ¹ , J.G.P. Bowman ¹ , T.K. Blake ¹ , L.M.M. Surber ¹ , K. Anderson ¹ , V. Raboy ² , and J. Broyles ¹ , ¹ Montana State University, Bozeman, ² USDA-ARS, National Small Grains Germplasm Research Facility, Aberdeen, ID. |

POSTER II

Friday 9:00 a.m. – 10:00 a.m.

Room: Ballroom A, SUB

Authors Present

Breeding and Genetics

Abstract Number

- 10 Calf weight/cow weight ratio at weaning as a predictor of beef cow efficiency. D. D. Kress^{*1}, D. C. Anderson², J. D. Stevens¹, E. T. Miller¹, T. S. Hirsch¹, J. E. Sprinkle¹, D. L. Boss², D. W. Bailey², R. P. Ansoteg¹, and M. W. Tess¹, ¹Montana State University, Bozeman, ²Northern Agricultural Research Center, Harve, MT.
- 11 Effects of genotypes of casein and serum proteins on milk production in Holsteins. A. Barreras*, O. Robinson, F. Monge, O. Vizcarra, and L. Navarro, Universidad Autonoma de Baja California, Mexicali, B.C. Mexico.
- 12 Estimates of genetic and phenotypic parameters for calf birth weight and calving difficulty in Limousin cattle. A.P. Marquez^{*1}, J.F. Ponce¹, J. Rodriguez¹, F. Bueno¹, H. Gonzalez¹, A. Correa¹, J. Guerrero², and J.F. Ccastillo³, ¹Instituto de Ciencias Agricolas, ²University of California, Holtville, ³Universidad Autonoma de Ciudad juarez.
- 13 Estimates of genetic parameters for weaning weight in Limousin cattle in a desertic region at north of Mexico. A.P. Marquez^{*1}, J.F. Ponce¹, J. Rodriguez¹, F. Bueno¹, H. Gonzalez¹, A. Correa¹, J. Guerrero², and J.F. Ccastillo³, ¹Instituto de Ciencias Agricolas, ²University of California, Holtville, ³Universidad Autonoma de Ciudad juarez.
- 14 Estimates of genetic and phenotypic parameters of 368-day weight, total feed consumption, daily gain, and feed conversion in Limousin cattle in Samalayuca, Mexico. A.P. Marquez^{*1}, J. Guerrero², J.F. Castillo³, and J.H. Herrera⁴, ¹Instituto de Ciencias Agricolas, ²University of California, Holtville, ³Universidad Autonoma de Ciudad Juarez, ⁴Colegio de Posgraduados, Montecillos.

Extension

Abstract Number

- 39 A systems approach for reducing morbidity of feeder calves. D.J. Fennewald*, J.A. Paterson, R.J. Lipsey, P.J. Burfening, R.N. Funston, J. Peterson, and L.P. Anderson, Montana State University, Bozeman.

Nonruminant Nutrition

Abstract Number

- 63 Ileal digestibility of amino acids in pigs fed wheat diets supplemented with a fungal protease. M.A. Morales¹, M. Cervantes², M. Cuca¹, J.L. Figueroa¹, A. Pro¹, A.B. Araiza², S. Espinoza², V. Gonzalez², and N. Torrentera², ¹Colegio de Postgraduados, Montecillos, Edo. Mx, ²Instituto de Ciencias Agrcolas, UABC, Mexicali, B.C.
- 64 Limiting amino acids in wheat for growing-finishing pigs. M. Cervantes¹, A. Pichardo², M. Cuca², A. B. Araiza¹, and N. Torrentera¹, ¹Instituto de Ciencias Agrcolas, UABC, Mexicali, B.C., ²Colegio de Postgraduados, Montecillos, Edo.
- 65 In-vitro crude protein and starch digestibility of a gdhA transgenic corn. G.A. Apgar, K.E. Griswold, M. Zarate, R. Dado, D.A. Lightfoot, and M.J. Roeder*, Southern Illinois University, Carbondale.

Ruminant Nutrition

Abstract Number

- 115 Influence of re-alimentation protocol on ruminal parameters of feedlot cattle following a missed feeding. M. F. Montano*¹ and R. A. Zinn², ¹Universidad Autonoma de Baja California, Mexicali, (Mexico), ²University of California, Davis.
- 116 Variation in ruminal starch digestion due to dry rolling versus steam flaking corn and sorghum can be reliably predicted based on changes in starch solubility and 6-h amylase reactive insoluble starch. S. Rodriguez*¹, J. F. Calderon¹, and R. A. Zinn², ¹Universidad Autonoma de Baja California, Mexicali (Mexico), ²University of California, Davis.
- 117 Influence of dietary forage on the comparative feeding value of dry rolled and whole shelled corn. N. Torrentera*¹, R. A. Ware², and R. A. Zinn², ¹Universidad Autonoma de Baja California, Mexicali (Mexico), ²University of California, Davis.
- 118 Fermentation characteristics of a diet containing equal portions of forage and concentrate as affected by pH in continuous cultures of rumen contents. B. H. Thran*, H. S. Hussein, and H. Han, University of Nevada-Reno.
- 119 Effect of nutritional management for either constant or stair-stepped rates of gain on subsequent breeding performance of beef heifer calves. W. Poland* and K. Ringwall, North Dakota State University, Dickinson.
- 120 Development of a low-cost, easy-to-assemble, and durable ruminal cannula for cattle. E. G. Alvarez* and R. A. Zinn, University of California, Davis.

- 121 Comparison of one or two sustained-release chromic oxide boluses for sheep to estimate fecal output in calves. H.Q. Winger¹, K.C. Olson*¹, J.A. Walker², and B.R. Bowman¹, ¹Utah State University, Logan, ²South Dakota State University, Pierre.

ENVIRONMENT and LIVESTOCK MANAGEMENT II - ORAL

Chair: Dr. Bret Hess, University of Wyoming, Laramie

Friday, 10:30 a.m. – 12:00 p.m.

Room: Ballroom C, SUB

Time	Abstract Number	
10:30	31	Responses to supplements differing glucogenic potential fed to young postpartum range beef cows. R.C. Waterman*, L. Canales, R.L. Ashley, J.E. Sawyer, J.B. Taylor, G.D. Pulsipher, N.H. Wells, C.P. Mathis, D.E. Hawkins, G.B. Donart, E.E. Parker, S.H. Cox, J.A. Hartung, J. Horton ¹ , and M.K. Petersen, ¹ Kemin Industries, Inc. Des Moines, IA.
10:45	32	Influence of fat-supplementation on beef cow reproduction and calf performance. B. M. Alexander, D. L. Hixon, B. W. Hess, B. L. Garrett, J. D. Bottger*, and G. E. Moss, University of Wyoming, Laramie.
11:00	33	Effects of feed mixing time on performance, in vitro dry matter disappearance, and carcass characteristics in finishing cattle. K. J. Malcolm-Callis*, G. C. Duff, D. A. Walker, and M. W. Wiseman, Clayton Livestock Research Center, New Mexico State University, Clayton.
11:15	34	Comparison of Maximum Stabilized Enzyme of Russelville, Arkansas and monensin/tylosin as feed additives for feedlot steers. D. W. Bailey ¹ , D. C. Anderson ¹ , D. L. Boss ¹ , G. R. Welling* ¹ , and D. D. Kress ² , ¹ Northern Agricultural Research Center, Havre, MT, ² Montana State University, Bozeman.
11:30	35	Night Feeding of Growing Cattle in Hot Summer Relieved Heat Load and Tended to Increase Growth Efficiency. Arie H. Brosh*, Yoav Aharoni, Pavel Korilov, and Ala Orlov, Animal Science, ARO Newe-Yaar, Ramat Yishay, Israel.
11:45	36	Evaluation of market impacts on growth path management strategy. B.J. Renquist* and J.W. Oltjen, University of California, Davis.

PASTURES AND FORAGES - ORAL

Chair: Dr. Carl Hunt, University of Idaho, Moscow

Friday, 10:30 a.m. – 12:00 p.m.
Room 275, SUB

Time	Abstract Number	
10:30	78	Fibrous and non-fibrous carbohydrate supplementation to ruminants grazing forage from small grain crops. D. E. Mount*, J. C. Whittier, T. J. Steffens, and D. Schutz, Colorado State University, Fort Collins.
10:45	79	Identification of genetics markers associated with forage quality characteristics in Lewis X Karl barley lines. L.M.M. Surber*, J.G.P. Bowman, T. K. Blake, K. N. Robison, R. L. Endecott, and B. L. Robinson, Montana State University, Bozeman.
11:00	80	Effect of ammoniation and exogenous fibrolytic enzymes on in vitro degradability of bluegrass straw. A. V. Grove*, C. W. Hunt, G. T. Pritchard, and J. I. Szasz, University of Idaho, Moscow.
11:15	81	Influence of season and grazing management on diet quality, digestion, and ruminal fill in cattle grazing native range in western North Dakota. H. P. Pitcher*, J. S. Caton, L. L. Manske, and G. P. Lardy, North Dakota State University, Fargo.
11:30	82	Influence of rumen protein degradability and supplementation frequency on performance and nitrogen use in ruminants consuming low-quality forage: cow performance and efficiency of nitrogen use in wethers. D. W. Bohnert* ¹ , C. S. Schauer ¹ , and T. DelCurto ² , ¹ Eastern Oregon Agriculture Research Center, Oregon State University, Burns, ² Eastern Oregon Agriculture Research Center, Oregon State University, Union.
11:45	83	Influence of rumen protein degradability and supplementation frequency on steers consuming low-quality forage: ruminal fermentation and site of digestion. D. W. Bohnert* ¹ , C. S. Schauer ¹ , M. L. Bauer ² , and T. DelCurto ³ , ¹ Eastern Oregon Agriculture Research Center, Oregon State University, Burns, , ² North Dakota State University, Fargo, ³ Eastern Oregon Agriculture Research Center, Oregon State University, Union.

RUMINANT NUTRITION III – ORAL

Chair: Dr. Callan Ackerman, Oregon State University,
Corvallis

Friday, 10:30 a.m. – 12:00 p.m.

Room: Ballroom B, SUB

Time	Abstract Number	
10:30	122	Comparison of high fat and protein self fed supplements made from corn distillers byproducts and biuret for pregnant beef cows. S. J. Bartle*, ADM-MoorMan's, Inc., Quincy, IL.
10:45	123	Effect of season on Eastern Colorado native range crude protein levels. P.A.G.A. Sampaio*, J.C. Whittier, B.A. Riggs, D.N. Schutz, and D. Couch, Colorado State University, Fort Collins.
11:00	124	Prepartum supplementation with protein or fat and protein for grazing cows in three seasons of calving. E. E. Grings*, R. E. Short, M. Blummel, M. D. MacNeil, and R. A. Bellows, USDA-ARS, Fort Keogh LARRL, Miles City, MT.
11:15	125	Optimal level of rumen degradable protein in high-grain diets fed to feeder lambs. A. M. Encinias*, E. R. Loe, M. L. Bauer, G. P. Lardy, and J. S. Caton, ¹ North Dakota State University, Fargo.
11:30	126	Feedlot performance and carcass characteristics of lambs supplemented with rolled safflower seeds. H. Van Wagoner*, P.G. Hatfield, R. Kott, J.A. Boles, and J. Heeg, Montana State University, Bozeman.
11:45	127	Enzyme supplementation to overcome the negative associative effects of supplemental fat on fiber digestion in cattle. R. A. Ware* and R. A. Zinn, University of California, Davis.

POSTER III

Friday, 10:30 a.m. – 12:00 p.m.

Room: Ballroom A, SUB
Authors Present

Physiology

Abstract Number

- 94 Bovine embryo development *in vitro* in the medium containing phytohemagglutinin or pokeweed mitogen. S. Wang^{*1}, K.E. Panter², R.C. Evans¹, and T.D. Bunch¹, ¹Utah State University, Logan, ²USDA-ARS, Poisonous Research Laboratory, Logan.
- 95 Effect of feed restriction on ovulation and reproductive hormones in ewes. Z. Kiyama^{*}, E. A. Van Kirk, W. J. Murdoch, and G. E. Moss, University of Wyoming, Laramie.
- 96 Effects of supplemental protein provided to postpartum beef cows in liquid or cube form on metabolic, endocrine and reproductive functions. K. K. Kane^{*1}, T. P. Schafer¹, J. M. Harris², D. M. Hallford³, M. D. Remmenga³, and D. E. Hawkins³, ¹Angelo State University, San Angelo, ²Westway Feed Products, Tomball, TX, USA, ³New Mexico State University, Las Cruces.
- 97 Differential relationships of metabolic hormones and serum glucose to growth and reproductive development of Angus, Brahman, and Brangus heifers. R Lopez^{*1}, M.G. Thomas¹, D.M. Hallford¹, D.H. Keisler², B.S. Obeidat¹, C.D. Morrison², J.A. Hernandez¹, W.D. Bryant¹, R. Flores¹, and M.D. Garcia¹, ¹New Mexico State University, Las Cruces, ²University of Missouri, Columbia.
- 98 Serum thyroxine and reproductive characteristics of Rambouillet ewe lambs treated with propylthiouracil before puberty. N. H. Wells^{*}, D. M. Hallford, and J. A. Hernandez, New Mexico State University, Las Cruces.
- 99 *In vitro* development of bovine embryos treated with isocupressic acid (ICA), a pine needle abortifacient toxin. S. Wang^{*1}, K.E. Panter², D.R. Gardner², R.C. Evans¹, and T.D. Bunch¹, ¹Utah State University, Logan, ²Poisonous Research Laboratory, Agricultural Research Service, USDA, Logan, UT.
- 100 Use of fluorogestone acetate or natural progesterone to induce estrus on seasonal anestrous goats with good or poor body condition. A. Anchondo, A. Martinez, J. Gutierrez, A. Grado, and F.A. Rodriguez-Almeida^{*}, Universidad Autonoma de Chihuahua, Chihuahua, MX.
- 101 Ram mating behavior is influenced by long-term selection for number of lambs born. J. N. Stellflug^{*1}, J. G. Berardinelli², and P.J. Burfening², ¹USDA-ARS US Sheep

Experiment Station, Dubois, ID, ²Montana State University, Bozeman, MT.

- 102 Bull introduction hastens the onset of the breeding season in reindeer. M.P. Shipka*¹, G.L. Finstad¹, T.F. Nichols¹, and S.P. Ford², ¹University of Alaska, Fairbanks, ²Iowa State University, Ames.
- 103 Body weight and body condition score changes and reproductive success in ewes fed Megalac[®] supplements. J.L. Bollinger*, T. T. Ross, D. J. Padilla, and D.M. Hallford, New Mexico State University, Las Cruces.
- 104 Effect of fasting and intramammary infusions of cephalixin benzathine on hormone profiles and mammary characteristics in ewes following weaning. M. E. Surian¹, D.W. Holcombe*¹, D. Redelman¹, J. R. Allen¹, M. McFarland¹, and D. M. Hallford², ¹University Of Nevada, Reno, ²New Mexico State University, Las Cruces.
- 49 Feedlot performance of Bulls actively immunized against luteinizing hormone releasing hormone fusion proteins. D Aissat*, J.M Sosa, D. M deAvila, K. P Bertrand, and J. J Reeves, Washington State University, Pullman.
- 52 Use of bovine somatotropin in conjunction with CO-Synch and Select Synch protocols for synchronizing estrus and ovulation in beef cows. H. Foster*¹, J.C. Whittier¹, P.D. Burns¹, J. Breummer¹, D. Baker, T. Engle¹, T. Field¹, W.R. Wailes¹, T.W. Geary², D.C. Anderson³, and D.L. Boss³, ¹Colorado State University, Ft. Collins, CO, ²USDA-ARS, Miles City, MT, ³Northern Montana Ag. Exp. Sta., Havre, MT.

RUMINANT NUTRITION

Abstract Number

- 128 Interaction of dietary eNDF level and supplemental fibrolytic enzymes on site and extent of fiber digestion in cattle fed a 35% forage growing diet. M. Ambrosia*¹, E. G. Alvarez¹, and R. A. Zinn², ¹Universidad Autonoma de Baja California, Mexicali (Mexico), ²University of California, Davis.
- 129 Influence of Fibrozyme on growth performance of yearling steers. A. Peirera* and R. A., Zinn, University of California, Davis.
- 130 The effect of feeding wheat middlings to growing and finishing beef steers on production, digestibility, and carcass characteristics. D.R. ZoBell*, K.C. Olson, C.A. Stonecipher, and R.D. Wiedmeier, Utah State University, Logan.
- 131 Feedlot performance and carcass characteristics of Tarentaise and Red Angus steers as affected by fish oil supplementation of a high-forage finishing diet. S. L. Lake*¹, H. S. Hussein¹, H. A. Glimp¹, T. P. Rinkob¹, and J. Johnson², ¹University of Nevada-Reno, ²Omega Protein.

- 132 Influence of fat titer and method of addition on characteristics of ruminal and total tract digestion. A. Plascencia¹, M. Cervantes*¹, and R. A. Zinn², ¹Universidad Autonoma de Baja California, Mexicali (Mexico), ²University of California, Davis.
- 133 Comparative feeding value of tallow vs yellow grease in finishing diets for feedlot cattle. A. Plascencia*¹, M. Cervantes¹, and R. A. Zinn², ¹Universidad Autonoma de Baja California, Mexicali (Mexico), ²University of California, Davis.
- 134 Effect of roasting dry or tempered Gallatin barley on in situ extent and rate of ruminal disappearance. S. J. Sorensen* and D. D. Hinman, University of Idaho, Caldwell.
- 135 Evaluation of concentrated separator by-product in beef steer receiving diets. E. R. Loe, M. L. Bauer*, G. P. Lardy, J. S. Caton, and A. M. Encinias, North Dakota State University, Fargo.
- 136 Effect of potato-processing waste in finishing diets on performance and carcass characteristics of yearling heifers. A. E. Radunz*, M. L. Bauer, G. P. Lardy, P. T. Berg, and E. R. Loe, North Dakota State University, Fargo.
- 137 Influence of supplement level on forage intake and digestibility for beef cows. N. Taylor*, J.G.P. Bowman, B.F. Sowell, and J. Broyles, Montana State University, Bozeman.
- 138 Feeding value of Lewis and Baronesse barley lines for finishing steers. R. L. Endecott*, J.G.P. Bowman, L.M.M. Surber, D. L. Boss, K. N. Robison, and T. K. Blake, Montana State University, Bozeman.
- 139 Feeding value of Morex, Steptoe, and two experimental backcross barley lines for finishing steers. J. J. Kincheloe*, J.G.P. Bowman, L.M.M. Surber, K. A. Anderson, K. N. Robison, R. L. Endecott, B. L. Robinson, and T. K. Blake, Montana State University, Bozeman.

RANCH TOUR

Saturday, June 23, 2001

Leave from south end of Strand Student Union
Building (SUB)

Return times are approximate

- 7:30 a.m. – 5:30 p.m. Flying D Bison Ranch, Sitz
Angus Ranch, Cooper
Hereford Ranch
- 7:30 a.m. – 2:00 p.m. Flying D Bison Ranch, Sitz
Angus Ranch
- 11:00 a.m. – 5:30 p.m. Sitz Angus Ranch, Cooper
Hereford Ranch

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 1965-66 O.O. Thomas, Montana State University
 1964-65 R. Bogart, Oregon State University
 1963-64 P.O. Stratton, University of Wyoming
 1962-63 T.D. Bell, University of Idaho
 1961-62 J.A. Bennett, Utah State University
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 1947 F.S. Hultz, University of Wyoming
 1943-46 J.H. Knox, New Mexico State University
 1942 R.T. Clark, Montana State University
 1941 H.R. Guilbert, University of California
 1940 J. Sotola, Washington State University
 1938-39 J.E. Norby, University of Idaho
 1937 E.H. Hughes, University of California
 1935-36 C.W. Hickman, University of Idaho
 1934 F.S. Hultz, University of Wyoming
 1932-33 J.F. Wilson, University of California
 1930-31 J.A. Hill, University of Wyoming
 1929 E.L. Potter, Oregon State University

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1995	C.F. Kockles, Colorado State University
1994	K. Koong, Oregon State University
1993	J.S. Brings, Colorado State University
1992	J.D. Wallace, New Mexico State University
1991	C.B. Theurer, University of Arizona
1990	M.H. Kennington, California State Poly Univ.
1989	C.W. Newman, Montana State University
1988	C.J. Kercher, University of Wyoming
1987	D.C. England, Oregon State University
1986	W.N. Garrett, University of California-Davis
1985	R.L. Blackwell, Montana State University
1984	V.R. Bohman, University of Nevada-Reno
1983	R.A. Bellows, LARC, Montana
1982	D.C. Church, Oregon State University
1981	W.H. Hale, University of Arizona
1980	R.J. Raleigh, Oregon State University
1979	J.K. Matsushima, Colorado State University
1978	P.T. Cupps, University of California-Davis
1977	J.P. Bowland, University of Alberta
1976	G.P. Lofgreen, University of California-Davis
1975	I.A. Dyer, Washington State University
1974	J.E. Oldfield, Oregon State University
1973	H.H. Stonaker, Colorado State University
1972	L.E. Harris, Utah State University
1971	R. Bogart, Oregon State University

Young Scientists

2000	T.J. DelCurto, Oregon State University
1999	K.E. Belk, Colorado State University
1998	N.E. Cockett, Utah State University
1997	J.G.P. Bowman, Montana State University
1996	M.E. Mirando, Washington State University
1995	M.B. Judkins, University of Nevada-Reno
1994	M.E. Wise, University of Arizona
1993	J.D. Tatum, Colorado State University
1992	M.K. Petersen, New Mexico State University
1991	W.J. Murdock, University of Wyoming
1990	D.C. Adams, USDA, Miles City
1989	A.R. Menino, Oregon State University
1988	M.L. Galyean, New Mexico State University
1987	R. Allen, University of Arizona
1986	J.R. Males, Washington State University
1985	G.B. Anderson, University of California-Davis

- 1984 E.L. Squires, Colorado State University
- 1983 G.E. Seidel, Colorado State University
- 1982 P.J. Burfening, Montana State University
- 1981 R.W. Wright, Jr., Washington State University
- 1980 T.M. Nett, Colorado State University
- 1979 P.R. Cheeke, Oregon State University
- 1978 S.L. Davis, University of Idaho
- 1977 J.J. Reeves, Washington State University
- 1976 C.C. Kaltenbach, University of Wyoming
- 1975 G.D. Niswender, Colorado State University

Extension Award

- 2000 R.L. Hathaway, Oregon State University
- 1999 A.M. Swinker, Colorado State University
- 1998 J.C. Whittier, Colorado State University
- 1997 J.W. Oltjen, University of California-Davis
- 1996 R.W. Knott, Montana State University
- 1995 N.J. Stenquist, University of Utah
- 1994 R.C. Torrell, University of Nevada-Reno
- 1993 J.E. Nel, University of Wyoming
- 1992 D.L. Hixon, University of Wyoming
- 1991 L.J. Krysl, University of Nevada-Reno
- 1990 T.L. Stanton, Colorado State University
- 1989 C.G. Gibson, University of Idaho
- 1988 R.M. Brownson, Montana State University
- 1987 J.M. Sachse, New Mexico State University

Teaching Award

- 2000 T.R. Famula, University of California
- 1999 D.W. Holcombe, Colorado State University
- 1998 J.D. Tatum, Colorado State University
- 1997 J.J. Reeves, Washington State University
- 1996 R.D. Greene, Colorado State University
- 1995 T.G. Field, Colorado State University
- 1994 D.W. Weber, Oregon State University
- 1993 W.A. Schurg, University of Arizona
- 1992 M.L. Riley, University of Wyoming
- 1991 D.M. Hallford, New Mexico State University
- 1990 L.E. Orme, Brigham Young University
- 1989 E.L. Martin, Washington State University
- 1988 J.A. Froseth, Washington State University
- 1987 R.E. Taylor, Colorado State University

First Place Recipients of the Competition Paper Award

- 2000 M. Bertolini, University of California
- 1999 L. Brokaw, University of Wyoming
- 1998 L.R. McMahon, University of Saskatchewan
- 1997 T.E. Ludwig, Washington State University
- 1996 T.M.M. Bernardini, Montana State University
- 1995 L.M.M. Surber, Montana State University
- 1994 S.I. Paisley, University of Wyoming
- 1993 K.A. Naivar, University of Wyoming
- 1992 M.J. Guthrie, New Mexico State University
- 1991 T.W. Geary, Washington State University
- 1990 M.A. Lane, Montana State University
- 1989 D.L. Rankins, New Mexico State University

1988 D.M. Grieger, Washington State University
1987 M. Flood, Washington State University
1986 J.M. Miner, Montana State University
1985 J.S. Caton, New Mexico State University
1984 M.J. Garber, Washington State University
1983 J. Brown, Washington State University
1982 D. Honeyfield, Washington State University
1981 M.U. Marcano, Washington State University
1980 J.C. Throckmorton, Oregon State University
1979 C.L. Griggin, New Mexico State University
1978 M.K. Petersen, University of Idaho
1977 C.A. Hildebrand, University of Idaho
1976 S.R. Becker, Washington State University
1975 C.C. Calvert, Montana State University
1974 T.M. Bray, Washington State University
1973 C. Shreffler, Oregon State University
1972 P.V. Rattray, University of California
1971 A. Booren, University of Wyoming
1970 R.L. Quaas, Colorado State University
1969 D. Wideman, Colorado State University
1968 A.A. Howells, Washington State University

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